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World population monitoring, focusing on the changing age structures of populations and their implications for development

Report of the Secretary-General

Summary

In its decision 2005/1, the Commission on Population and Development decided that the special theme for its fortieth session would be the changing age structures of populations and their implications for development. The present report provides the basis for the Commission's deliberations.

The report reviews trends and prospects regarding the changing age structures of populations in the light of the demographic transition. It discusses the likely economic implications of the increasing number of producers per effective consumer as fertility declines, as well as the potential for increasing a society's wealth as people save more in preparation for a longer period in retirement. The report also focuses on the importance of intergenerational transfers and the institutions that support them. The importance of ensuring intergenerational equity and improving the livelihoods of young generations by improving educational attainment is underscored. Lastly, policy approaches to the implications of population ageing are reviewed.

The report was prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

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Contents

		Paragraphs	Page
I.	Introduction	1–5	4
II.	Changing population age structures	6–26	5
	A. Trends in the population of children and youth	11–13	9
	B. Trends in the population aged 25 to 59	14–15	10
	C. Trends in the population aged 60 or over	16–19	11
	D. The increasing median age	20–22	12
	E. Is population ageing inevitable?	23–26	14
III.	The economic impact of changing population age structures	27–64	16
	A. Dependants and workers	27–32	16
	B. Consumers, producers and the first demographic dividend	33–42	18
	C. The second demographic dividend	43–46	22
	D. The importance of transfers in ensuring old-age support	47–56	23
	E. The importance of transfers for intergenerational equity	57–64	26
IV.	The transition to adulthood	65–70	28
V.	The epidemiological transition: changing causes of death by age	71–83	30
	Healthy life expectancy, compression of morbidity and health-care costs	76–83	31
VI.	Policy responses to changing population age structures	84–96	34
	A. Improving the viability of pension systems	87–91	35
	B. Policies to support families in low-fertility settings	92–96	36
VII.	Conclusions	97–108	37

Tables

1.	Current and projected age distribution of the world and the major developing groups, medium variant	6
2.	Current and projected age distribution of the world and the major areas, medium variant	7
3.	Indicators of the length of the first demographic dividend and its overall impact by major area	21
4.	Percentage distribution of the population aged 60 or over by household composition and sex	26
5.	Leading causes of death by age group, 2002	32

Figures

I.	Percentage distribution of the population by broad age group and major area, 1950-2050	9
II.	Distribution of the population in different age groups by major area, 2007 and 2050	10
III.	Probability of survival to age 60 and life expectancy at age 60 by sex, 2000-2005	12

IV. Percentage of women by age group for the world and the major development groups, 1950, 2007 and 2050 13

V. Median age by country, 2005 14

VI. Trends in the three types of dependency ratios for the world, the development groups and the major areas, 1950-2050 17

VII. Consumption and labour income schedules by age for selected countries 19

I. Introduction

1. The world population is in the midst of an unprecedented transformation brought about by the transition from a regime of high mortality and high fertility to one of low mortality and low fertility. This demographic transition is responsible for the rapid and accelerating growth that the world population experienced in the twentieth century, as well as for the slowing down of that growth, and for the changes in the age distribution associated with those developments. Indeed, the demographic transition starts usually with a reduction in mortality, which results in longer survival, particularly of children, who typically benefit the most from the reduction of the very high risks of death that they experience when mortality is high. As a consequence, population growth accelerates and the proportion of children in the population increases, leading to a rejuvenation of the population's age structure. Partly in response to these changes, fertility begins to decrease because parents realize that they can have fewer children to ensure the survival of the number they desire. Sustained reductions in fertility slow down population growth and eventually produce reductions in the proportion of children in the population, thus triggering the process of population ageing. As time elapses, if the reductions in fertility and mortality continue, they reinforce the ageing process because, over time, sustained fertility decline leads to decreasing proportions not only of children, but also of young people and eventually of adults of working age. Furthermore, increases in longevity accelerate the growth of the proportion of older persons more than those of young people or adults.

2. The effects of the demographic transition on population age structures can therefore be divided into three distinct stages. During the first, there is a rejuvenation of the age distribution as the proportion of children increases. During the second, triggered by fertility reductions, the proportion of children begins to decline while the proportions of adults and older persons rise. During the third stage, the proportions of both children and adults of working age decline and only the proportion of older persons rises, as a result of long-term reductions in both fertility and mortality.

3. During the second stage of the transition, adults of working age constitute a significantly larger proportion of the total population than during the first stage of the transition, so that the number of potential workers per dependant (i.e., children and older persons) increases for a certain period until it reaches a maximum. During that period, a population is optimally placed to benefit from economically productive investment because its levels of economic dependency are low and there are relatively more potential workers to support persons in the non-productive ages (children and older persons). The terms "demographic dividend" and "demographic window of opportunity" have been used to describe this stage of the transition and allude to the possibilities that it presents for raising a country's rate of economic growth and its standard of living. During such a period, consumption per effective consumer can rise at the same time as the share of gross domestic product (GDP) consumed declines, implying that a larger share of national output can be diverted from consumption into investment without sacrificing current living standards. Furthermore, as people realize that their prospects for living longer are improving, the demand for resources to support consumption in old age emerges. At this early stage of the ageing process countries can most easily establish an institutional framework that fosters the accumulation of wealth and thus sets the stage for the realization of a second demographic dividend. This second dividend arises from the improving balance of asset holders to workers, producing higher wealth per

producer, which can boost labour productivity and raise asset income, albeit at the cost of an initial phase of slower growth in consumption. Unlike the first dividend, which is transitory, the second dividend can be a permanent feature of an older population.

4. Achieving the benefits associated with the first and second dividends depends on developing sound macroeconomic policies that promote savings and productive investment, increase employment opportunities and ensure a stable social and economic environment that is propitious for sustained economic growth and sustainable development. One of the challenges faced during the demographic window of opportunity is the need to educate and provide adequate employment for the rapidly growing population of young people (persons aged 15-24). In addition, societies that are advanced in the second stage of the transition need to plan for the rapid population ageing expected during the third stage by developing policies in a variety of spheres, including the provision of health care and support to older persons.

5. The present report reviews demographic trends and prospects related to the changing age distributions of populations, discusses their likely economic implications and considers the social implications and policy aspects of these trends. Most of the data on past trends and future prospects are derived from the *2004 Revision of World Population Prospects*: *The 2004 Revision*, vol. II.[1] In what follows, a number of age groups will be the focus of attention, including children (persons aged 0-14 years), young persons or youth (persons aged 15-24 years), adults of working age (15-59 years), adults in the prime working ages (25-59 years), older persons (60 years or over) and the oldest-old (80 years or over).

II. Changing population age structures

6. Today most countries in the world are already well into the demographic transition, but there is considerable variation with respect to which stage of the transition each has reached. Japan and most countries in Europe are starting the third stage of the transition, and many of their populations are among the oldest in the world. Australia, Canada, New Zealand and the United States of America are also on the verge of the third stage of the transition, but, because their fertility levels have not fallen as low as those of Europe, their populations are experiencing a somewhat slower ageing process. Most countries in Asia and Latin America and the Caribbean find themselves in the second stage of the transition and are still in time to benefit from the first demographic dividend. However, because fertility reductions in those major areas have been rapid, their populations are expected to age more rapidly than the populations of developed countries. Most countries in Africa are either still at the first stage of the transition or just entering the second stage, and their populations are still young. Assuming that fertility in African countries declines as fast as projected, they are poised to enter the demographic window of opportunity. However, countries severely affected by the HIV/AIDS epidemic have already experienced a major setback in the transition to low mortality and may take longer than expected both to gain control of the epidemic and to reduce their fertility.

7. In 2007, 28 per cent of the 6.6 billion people on Earth are children, 18 per cent are young people, 44 per cent are persons in the prime working ages and 10 per cent

[1] United Nations publication, Sales No. E.05.XIII.6.

are older persons. When the countries of the world are divided into three major development groups, namely, the developed countries, the 50 least developed countries and the rest of the developing countries (referred to as developing countries for short), it is apparent that the developing countries, which account for 70 per cent of the world population, determine the age distribution at the world level (see table 1). Both developed countries and the least developed countries have population age distributions that differ considerably from the world average. The population of developed countries is older, with older persons accounting for 21 per cent and children for 17 per cent. In contrast, the population of the least developed countries is distinctly younger, with older persons accounting for 5 per cent and children for 41 per cent.

Table 1
Current and projected age distribution of the world and the major developing groups, medium variant

	Population (millions)				*Percentage*			
Age	*2007*	*2015*	*2025*	*2050*	*2007*	*2015*	*2025*	*2050*
				World				
0-14	1 823	1 870	1 909	1 833	28	26	24	20
15-24	1 183	1 190	1 211	1 225	18	16	15	13
25-59	2 906	3 266	3 593	4 051	44	45	45	45
60-79	611	770	1 032	1 574	9	11	13	17
80+	94	123	160	394	1	2	2	4
				Developed countries				
0-14	203	201	196	193	17	16	16	16
15-24	163	145	140	133	13	12	11	11
25-59	599	599	570	510	49	48	46	41
60-79	204	234	275	284	17	19	22	23
80+	48	57	68	116	4	5	5	9
				Developing countries[a]				
0-14	1 291	1 293	1 281	1 137	28	26	23	19
15-24	857	854	841	777	19	17	15	13
25-59	2 043	2 335	2 590	2 794	44	46	47	46
60-79	369	488	691	1 136	8	10	13	19
80+	43	61	86	261	1	1	2	4
				Least developed countries				
0-14	329	376	433	502	41	40	37	29
15-24	163	192	230	314	20	20	20	18
25-59	264	331	433	747	33	35	37	43
60-79	38	48	67	154	5	5	6	9
80+	3	4	6	17	0	0	1	1

Source: *World Population Prospects: The 2004 Revision.*
[a] Excluding the least developed countries.

8. Over the course of the coming decades, the populations of all major development groups are expected to age. In developed countries, the proportion of children is expected to remain virtually stable at 16 per cent, but the proportion of older persons is expected to increase by half, to reach 32 per cent in 2050. Hence, developed countries expect to have, on average, two older persons for every child in 2050. Developing countries are expected to see their proportion of children decline by about a third, to reach 19 per cent in 2050, while the share of the older population more than doubles, to 23 per cent. By 2050, the least developed countries will still have a relatively young population, with children accounting for 29 per cent of the population and older persons for 10 per cent.

9. In terms of major areas, Europe has the oldest population and is projected to maintain that rank over the foreseeable future (see table 2 and figure I). In comparison, Northern America has a slightly younger population. In 2007, older persons account for 17 per cent of the population in Northern America and for 21 per cent in Europe. Because Northern America is expected to have higher fertility and net migration rates than Europe over the coming decades, the share of the older population is expected to be considerably lower in Northern America than in Europe in 2050 (27 per cent versus 35 per cent).

10. Asia and Latin America and the Caribbean have very similar age distributions today and are expected to maintain that similarity until 2050. In both major areas, the share of older persons is expected to increase nearly two and a half times, going from about 10 per cent today to about 24 per cent in 2050. Africa, with the youngest age distribution among major areas, is expected to attain by 2050 an age distribution similar to that of Latin America and the Caribbean today.

Table 2
Current and projected age distribution of the world and the major areas, medium variant

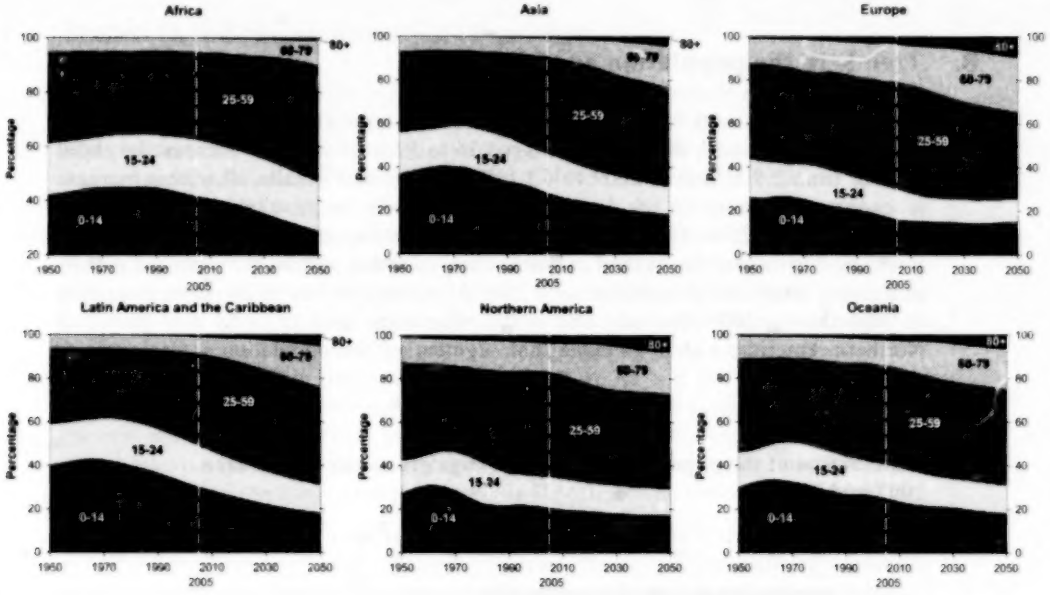
	Population (millions)				*Percentage*			
Age	*2007*	*2015*	*2025*	*2050*	*2007*	*2015*	*2025*	*2050*
				Africa				
0-14	388	442	495	556	41	40	37	29
15-24	197	225	270	350	21	20	20	18
25-59	310	385	494	838	33	34	37	43
60-79	46	58	78	173	5	5	6	9
80+	4	5	7	20	0	0	1	1
				Asia				
0-14	1 078	1 074	1 067	954	27	25	23	18
15-24	728	722	701	650	18	17	15	12
25-59	1 805	2 047	2 254	2 382	45	47	48	46
60-79	343	449	623	996	9	10	13	19
80+	42	60	83	235	1	1	2	5

Age	Population (millions)				Percentage			
	2007	2015	2025	2050	2007	2015	2025	2050
				Latin America and the Caribbean				
0-14	168	168	163	141	29	26	23	18
15-24	107	109	110	99	18	17	16	13
25-59	249	287	323	354	43	45	46	45
60-79	45	60	86	148	8	9	12	19
80+	7	10	15	40	1	2	2	5
				Northern America				
0-14	68	70	71	75	20	19	18	17
15-24	48	49	50	52	14	14	13	12
25-59	163	169	173	192	48	47	45	44
60-79	46	60	78	85	14	16	20	19
80+	12	13	16	33	4	4	4	8
				Europe				
0-14	113	109	104	98	15	15	15	15
15-24	98	80	75	67	14	11	11	10
25-59	363	360	330	263	50	50	47	40
60-79	126	139	161	163	17	19	23	25
80+	28	33	37	63	4	5	5	10
				Oceania				
0-14	8	8	9	9	24	22	21	18
15-24	5	6	5	6	16	15	13	12
25-59	15	17	19	21	46	46	45	45
60-79	4	5	7	9	12	14	17	18
80+	1	1	1	3	3	3	3	7

Source: *World Population Prospects: The 2004 Revision.*

Figure I

Percentage distribution of the population by broad age group and major area, 1950-2050



Source: *World Population Prospects: The 2004 Revision*.

A. Trends in the population of children and youth

11. Although the proportions of children and youth are expected to decline in most major areas, the numbers of children and young people are projected to rise globally until at least 2025, mainly because of their increase in the least developed countries. Furthermore, although their numbers will be declining in all major areas by 2050, by that date the populations of children and young persons will be slightly larger than they are today. That is, over the next four decades, the world can expect to provide sustenance and education to about 1.9 billion children annually and to provide secondary or higher education or employment for about 1.2 billion young persons every year.

12. The relative stability expected in the global number of children and young persons results from diverging trends among different groups of countries in the developing world. In particular, Africa's share of the world's children is expected to increase from 21 per cent in 2007 to 30 per cent in 2050, whereas that of Asia and developing Oceania is projected to drop from 58 per cent to 51 per cent (see figure II). The share of Latin America and the Caribbean will decline slightly, from 9 per cent in 2007 to 8 per cent in 2050, while that of developed countries is expected to remain stable at 11 per cent.

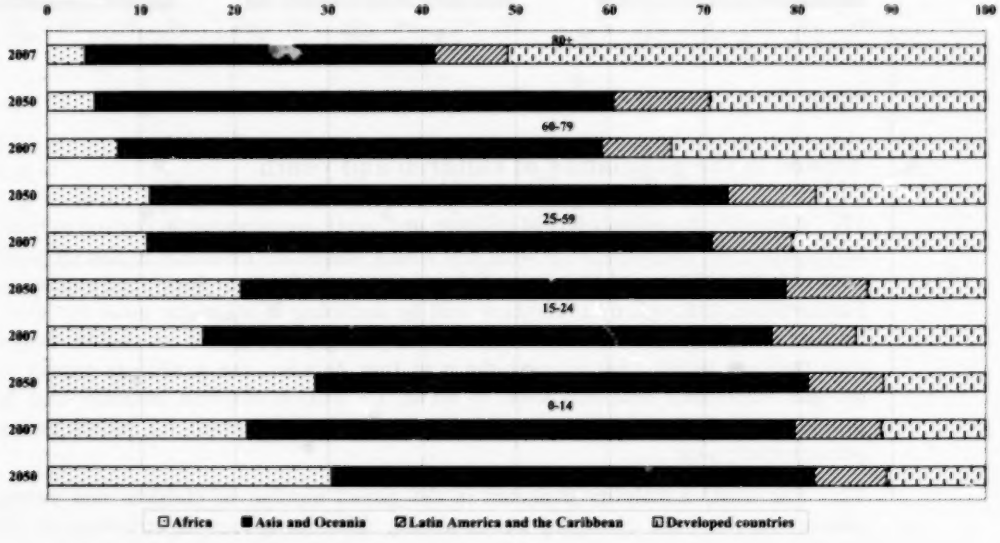
13. Regarding the regional distribution of young persons aged 15 to 24, the share of Asia and developing Oceania is expected to drop from 61 per cent to 52 per cent,

that of Latin America and the Caribbean from 9 per cent to 8 per cent and that of developed countries from 14 per cent to 11 per cent. In contrast, Africa, which today is home to 17 per cent of the world's youth, is expected to have 29 per cent of all young persons in 2050.

B. Trends in the population aged 25 to 59

14. In contrast with the near stability of the number of children and youth expected in the future, the population aged 25 to 59 is projected to increase by about a third: from 2.9 billion in 2007 to 4.1 billion in 2050. Virtually all of this increase is expected to occur in the less developed regions. In developed countries, the population aged 25 to 59 is projected to start decreasing after 2015, so that by 2050 it will be 15 per cent lower than in 2005. This reduction will be concentrated mainly in Europe, where the population aged 25 to 59 is expected to be 28 per cent smaller in 2050 than in 2005. No reduction in the population aged 25 to 59 is projected in Northern America, and in Oceania that segment of the population is projected to increase.

Figure II
Distribution of the population in different age groups by major area, 2007 and 2050



Source: *World Population Prospects: The 2004 Revision.*

15. The main increases in the population aged 25 to 59 are expected in Asia (577 million) and in Africa (528 million). In relative terms, Africa's population aged 25 to 59 is expected to rise by a factor of 2.7, passing from 310 million in 2007 to 838 million in 2050. As a consequence, whereas today Africa is home to 11 per cent of the population aged 25 to 59, its share is expected to reach 21 per cent in 2050. In sharp contrast, the share of the developed countries is projected to drop from 21 per

cent today to 13 per cent in 2050 (see figure II). Asia, however, will continue to have the largest share of the population aged 25 to 59, though it will drop from 60 per cent today to 58 per cent in 2050.

C. Trends in the population aged 60 or over

16. From 2007 to 2050, the world population aged 60 or over is expected to nearly triple, going from 0.7 billion to nearly 2 billion. The major part of this increase is expected to occur in Asia, where the number of persons aged 60 or over is projected to increase approximately threefold, from 0.4 billion in 2007 to 1.2 billion in 2050. Similarly, the older population in Latin America and the Caribbean is expected to more than triple and that of Africa will almost quadruple. Smaller relative increases are expected in Northern America and Oceania, where the older population is projected to double, and in Europe, where it is expected to increase by slightly under 50 per cent. In fact, in Europe, only the older population is expected to increase, since the numbers of persons in all younger age groups are expected to be considerably smaller in 2050 than they are today. As a result of these expected trends, the share of the older population living in developed countries is expected to decline markedly, while that in the developing world will increase accordingly. Thus, whereas today 64 per cent of all older persons live in the less developed regions, by 2050 the equivalent proportion is expected to be almost 80 per cent.

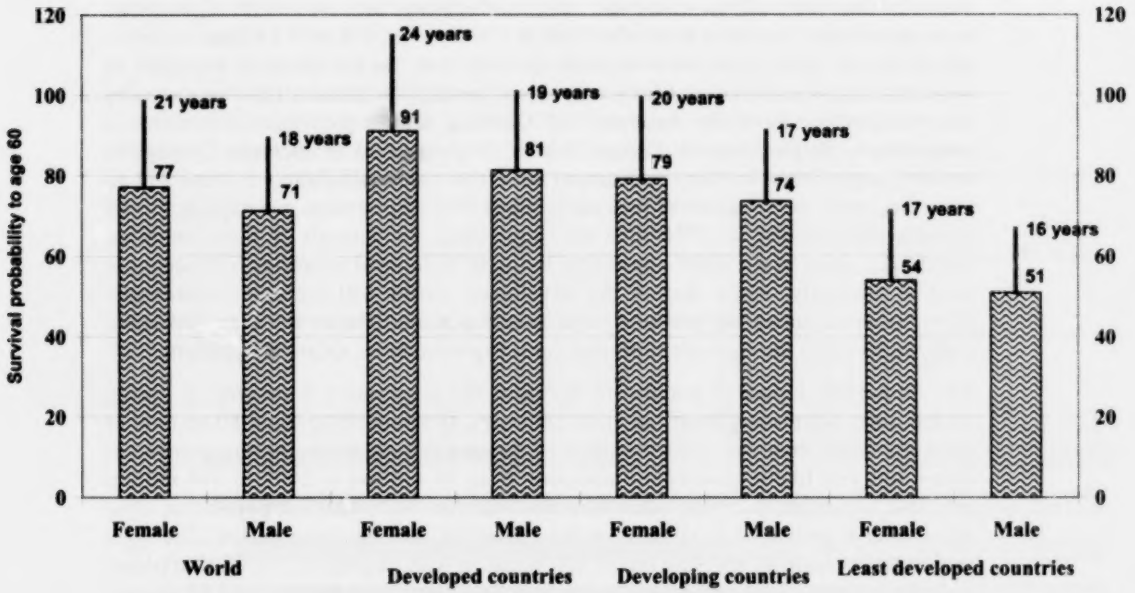
17. A notable aspect of population ageing is the progressive demographic ageing of the older population itself. In most countries, the population aged 80 or over is growing faster than any other segment of the population. Globally, the number of oldest old will likely quadruple, increasing from 94 million in 2007 to 394 million in 2050. In Africa, Asia and Latin America and the Caribbean, the population aged 80 or over is projected to increase at least fivefold over the same period. The most important increase in absolute terms will occur in Asia (a gain of 235 million oldest old). As a result, there will be an increasing concentration of people aged 80 or over in Asia: 55 per cent will live there in 2050, up from 37 per cent today. That increase will occur at the expense of the developed countries, whose share of the oldest-old population is expected to drop from 51 per cent today to 29 per cent in 2050 (see figure II).

18. Another important characteristic of the older population is the predominance of women among its members: because women survive longer than men, they significantly outnumber men at older ages. Figure III shows the probability of surviving to age 60 and life expectancy at age 60, both consistent with mortality in the period 2000-2005. Globally, 77 per cent of women and 71 per cent of men would expect to survive to age 60 if subject all their lives to 2000-2005 mortality conditions. Once they reached age 60, women could expect to survive, on average, a further 21 years and men 18 years. These compounded sex disparities, which are stronger in developed countries than elsewhere, produce a highly feminized population at older ages (see figure IV).

19. Women account for 55 per cent of the population aged 60 or over in the world and for 64 per cent of that aged 80 or over. That is, women outnumber men almost two to one at ages 80 or over. Europe today has the highest proportions of women at older ages: they account for 59 per cent of the older population and nearly 70 per cent of the oldest old. In the less developed regions, the proportions of women at

older ages are lower (53 per cent among older persons and 60 per cent among the oldest old), but from 2007 to 2050 the percentage of women at older ages is expected to decrease in developed countries and increase somewhat in developing countries, although women will continue to outnumber men at the higher ages in all regions (see figure IV).

Figure III
Probability of survival to age 60 and life expectancy at age 60 by sex, 2000-2005



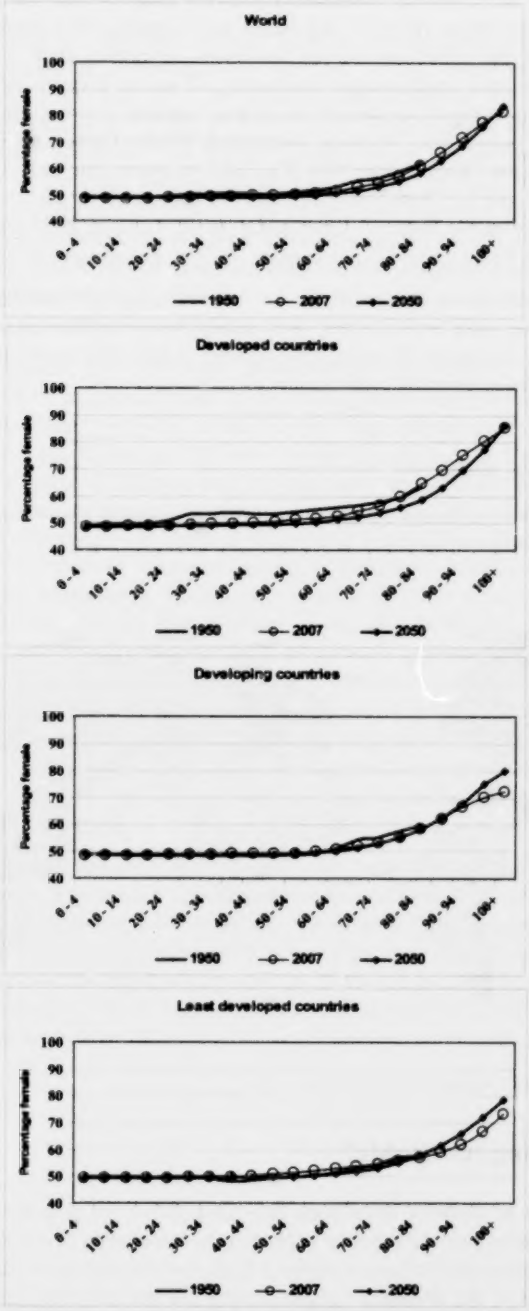
Source: *World Population Prospects: The 2004 Revision.*

D. The increasing median age

20. Increases in the median age — the age that divides the population into two equal halves — are indicative of population ageing. Between 1975 and 2005, the median age of the world population increased from 22 to 28 years, and it is projected to reach 38 years in 2050. Developed countries already have a median age of 39 years, projected to reach 45 years in 2050. The least developed countries, in contrast, have a median age of 19 years, and it will likely remain below 28 years until 2050. The other developing countries exhibit today a median age of 27, projected to increase to 39 by mid-century.

Figure IV

Percentage of women by age group for the world and the major development groups, 1950, 2007 and 2050

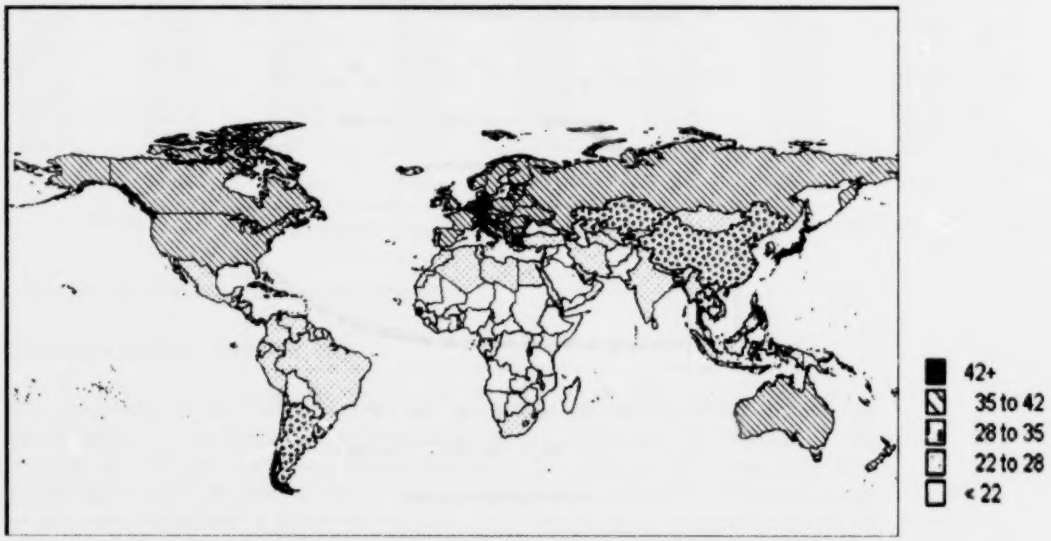


Source: *World Population Prospects: The 2004 Revision.*

21. At the country level, the youngest populations are concentrated in sub-Saharan Africa, the Arabian Peninsula and a few countries in South-Central and Eastern Asia, including Afghanistan and Pakistan (see figure V). Most countries in Central America also have young populations, as do Bolivia and Paraguay. The youngest populations are those of Mali, the Niger and Uganda, with median ages at or below 16 years. At the other end of the spectrum, countries such as Germany, Italy and Japan already have median ages surpassing 42 years. Indeed, all developed countries have median ages at or above 35 years. Among developing countries, those with the oldest populations include Argentina, Chile, Cuba and Uruguay in Latin America and China, Kazakhstan and Thailand in Asia, but only Cuba has a median age above 35 years. China, in particular, is expected to age very rapidly, with its median age increasing from 33 years today to 45 years in 2050 and the share of the older population rising from 12 per cent in 2007 to 31 per cent at mid-century.

22. By 2050, few countries are expected to have median ages below 22 years, but 17 countries, mostly in Asia and Europe, will likely have median ages above 50 years. All developing countries outside sub-Saharan Africa are projected to have median ages of 35 years or over by mid-century.

Figure V
Median age by country, 2005



Source: World Population Prospects: The 2004 Revision.

E. Is population ageing inevitable?

23. Since reductions in fertility have been the main driver of population ageing, can changes in the future path of fertility reduce or reverse population ageing? The United Nations population projections include a high variant whose fertility remains half a child above that of the medium variant during the period from 2005 to 2050. For most countries, fertility reaches 2.35 children per woman by the period 2045 to

2050 in the high variant. This variant produces in 2050 a global population of 10.6 billion that is still increasing by 0.9 per cent per year. If future fertility were markedly higher than that projected in the high variant, the population would grow faster and would more likely reach unsustainable levels.

24. According to the high variant, children would constitute 25 per cent of the world population in 2050 and older persons 18 per cent, up from 28 per cent of children and 10 per cent of older persons today. That is, the high variant produces only a small reduction in the proportion of children, but the proportion of older persons almost doubles. The higher fertility projected in the high variant is also insufficient to prevent further population ageing in developed countries, whose proportion of older persons rises from 21 per cent today to 28 per cent in 2050. For the less developed regions, the high variant produces a doubling of the proportion of older persons and a 20 per cent reduction in the proportion of children. Thus, even assuming higher fertility and the continuation of moderate population growth, population ageing seems inevitable.

25. How about the effect of international migration? Because international migrants tend to be concentrated in the young adult ages and are often accompanied by young children, they add to the younger age groups of a population. However, for international migration to have a lasting effect on the age structure of a population, sustained migrant inflows are required. In today's world, the developed countries as a whole are net receivers of international migrants. The medium variant assumes that the direction of those flows will continue and that developed countries will gain 2.2 million persons annually between 2010 and 2050. Projections assuming that there is no migration produce in 2050 a population for developed countries that has 15 per cent children, compared with 16 per cent in the medium variant, and 35 per cent persons aged 60 or over, compared with 32 per cent in the medium variant. That is, moderate levels of international migration make a small contribution to slowing down population ageing. Other studies have also shown that the effects of moderate migration levels on population ageing are usually small and that large to very large and continuous migration inflows would be required by countries with below-replacement fertility rates to offset projected reductions in the working-age population or in the potential support ratio.[2]

26. Much of the expected future ageing of today's population is already inscribed in the current population age distribution. Although future trends in fertility, mortality and migration will help shape population age distributions at mid-century, there is a powerful momentum built into current age structures. In particular, all the persons who will be aged 60 or over in 2050 are already born, and even keeping mortality constant at the levels reached in the period from 2000 to 2005 would mean that over 70 per cent of those people would survive to age 60.

[2] *Replacement Migration: Is it a Solution to Declining and Ageing Populations?* United Nations publication, Sales No. E.01.XIII.19).

III. The economic impact of changing population age structures

A. Dependants and workers

27. Dependency ratios are generally used to indicate the potential effects of population ageing on social and economic development. Three types of ratios are considered: (a) the child dependency ratio, which relates the number of children under 15 to the number of persons aged 15 to 59, (b) the old-age dependency ratio, which relates the number of persons aged 60 or over to those aged 15 to 59, and (c) the overall dependency ratio, which is the sum of the previous two. Dependency ratios are expressed per 100 persons aged 15 to 59.

28. As figure VI shows, the levels and trends of dependency ratios have varied significantly between development groups and among major areas. At the world level, the overall dependency ratio increased until it reached a maximum in the late 1960s and has been declining since then, in parallel with the drop in the child dependency ratio. However, it is expected to increase in the future as the old-age dependency ratio rises.

29. A similar pattern of change is observed in the less developed regions as a whole and in Asia and Latin America and the Caribbean. In Africa, the onset of the decline in the overall dependency ratio is more recent, and its level is not expected to increase before 2050. In the more developed regions as a whole, the overall level of dependency has been considerably lower than in the less developed regions since 1950 and has varied little since 1980, but it is expected to increase markedly in the future as the old-age dependency ratio climbs.

30. Today, the overall dependency ratio is 59 (number of dependants per 100 persons aged 15-59) in the more developed regions and 64 in the less developed regions as a whole. Among the latter, its value is 59 in Asia, 63 in Latin America and the Caribbean and 88 in Africa. Over the coming decades, all major areas except Africa will experience an increase in the overall dependency ratio. In Europe and Northern America, the increase is already starting, whereas in Asia, Latin America and the Caribbean and Oceania it is expected to start over the next decade or two. By 2050 Europe's overall dependency ratio is expected to be a high 98, similar to that of Africa in the 1960s. In Northern America its value is projected to be 79; in Oceania, 75; 73 in Latin America and the Caribbean; and 72 in Asia. Africa will have the lowest level, at 63 per 100.

31. Among developing countries, those with high levels of overall dependency tend to have lower per capita incomes than those with lower levels of dependency.[3] This relationship indicates that the better-off countries have tended to undergo the demographic transition earlier than those with lower incomes. In addition, the improvement in the dependency ratio caused by declining fertility can itself have a positive effect on economic growth.[4] As the number of potential workers per dependant increases, so does the potential for increasing production and improving the standard of living of the whole population, provided jobs can be generated for the increasing workforce.

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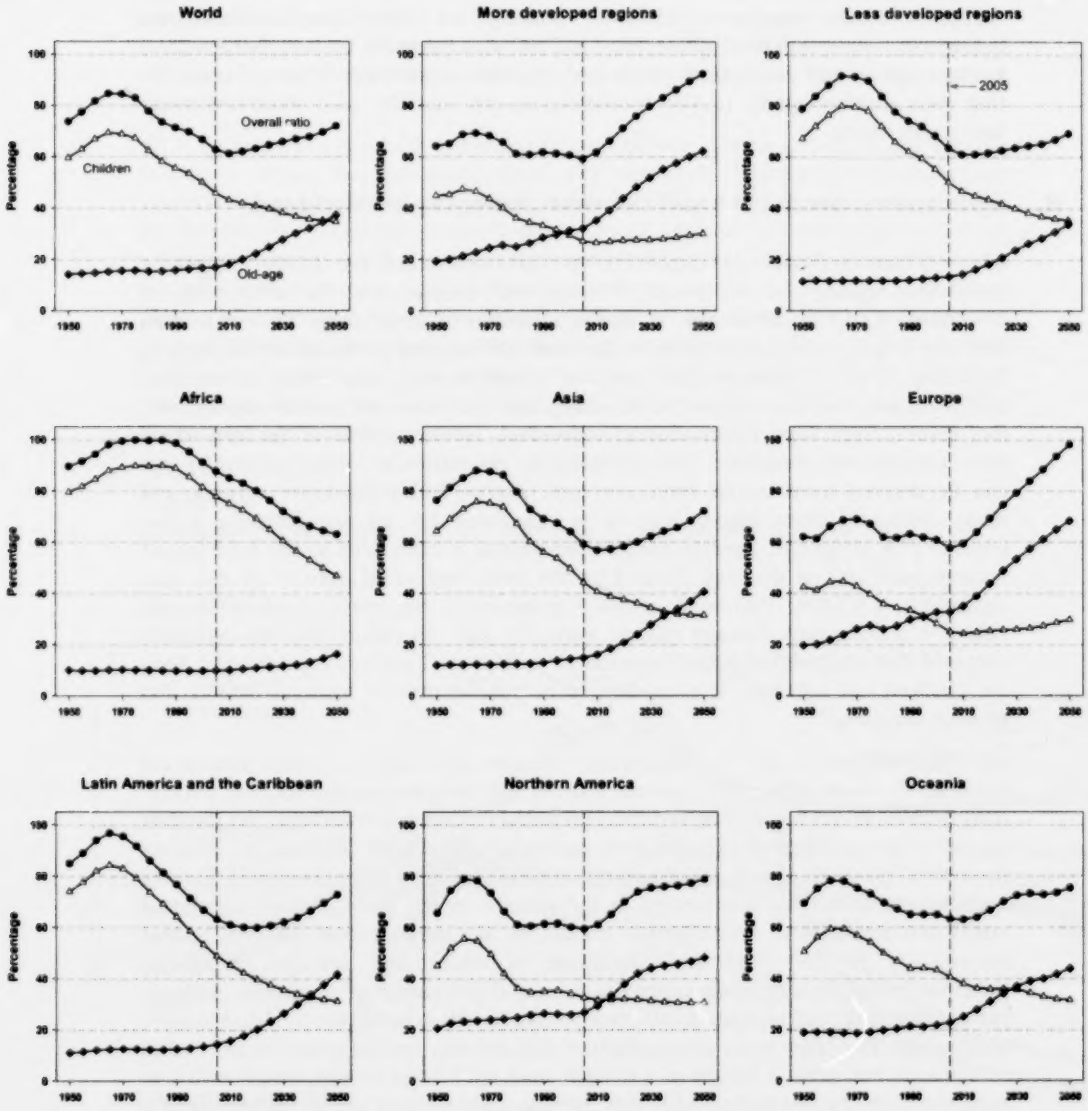
[3] Andres Uthoff, Jorge Bravo, Cecilia Vera and Nora Ruedi, "Cambios de la estructura por edades de la población, transferencias intergeneracionales y protección social en America Latina", *Notas de Población*, vol. 80 (2005), pp. 27-64.

[4] D. E. Bloom, David Canning and J. Sevilla, *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change* (Santa Monica, Rand Press, 2002).

Figure VI

Trends in the three types of dependency ratios for the world, the development groups and the major areas, 1950-2050[a]



Source: *World Population Prospects: The 2004 Revision.*

[a] Estimates and medium-variant projections.

32. In order to assess better the economic impact of the demographic transition, other types of dependency ratios have been considered. Uthoff and others[3] have calculated the ratio of the total number of persons outside formal employment to

those who are employed in the formal sector for 16 countries in Latin America. The numerator includes children, the elderly, the unemployed, those working in the informal sector (the underemployed) and those who are not in the labour force. The value of this ratio has been halved since 1950, mainly because of the major reduction in the number of children. Among the Latin American countries considered, those with the highest ratios in 2002 also tended to have higher levels of unemployment and underemployment and of child dependency. That is, countries that were further along in the transition to low fertility also exhibited more favourable ratios.

B. Consumers, producers and the first demographic dividend

33. Another approach to improving the assessment of the likely impact of population ageing on economic development focuses on the estimation of consumption and labour income by age in a number of populations. Labour income includes wages and salaries prior to taxation; all benefits provided by employers, including health insurance and pension contributions; any form of in-kind compensation; and any income from entrepreneurial activities or self-employment that results from work effort. For an individual, labour income is the sum of all these components of income. Data allowing the estimation of labour income by age can be derived from labour force surveys, income and expenditure surveys and many censuses. Once labour income is calculated for all economically active persons of a given age, average income per person is calculated as the total labour income generated at that age divided by the total number of persons of that age, regardless of whether they work or not. Consequently, the resulting labour income schedule reflects how average income varies by age. To ensure that the estimates obtained from microlevel data are consistent with overall economic parameters, they are checked and adjusted, if necessary, to be consistent with national income and product accounts.[5]

34. To estimate levels of consumption by age, two types of consumption are considered: consumption from private sources and that from public sources. Private consumption levels can be derived from household expenditure surveys, but the data typically do not relate consumption to particular individuals. Methods to allocate household spending to individual household members have been developed. Private spending on education is allocated to individuals on the basis of their enrolment status and estimates of spending per student by age derived from national budget information on the costs and utilization of educational services. Similarly, information on the aggregate expenditure on and utilization of in-patient and out-patient health services is used to allocate private health expenditure to individuals in households. For other types of expenditure that are less age-sensitive, an allocation rule is used that gives a weight of 1 to each adult aged 20 or over, a weight of 0.4 to each child aged 0 to 4 and weights that increase linearly with age to persons aged 5 to 19.

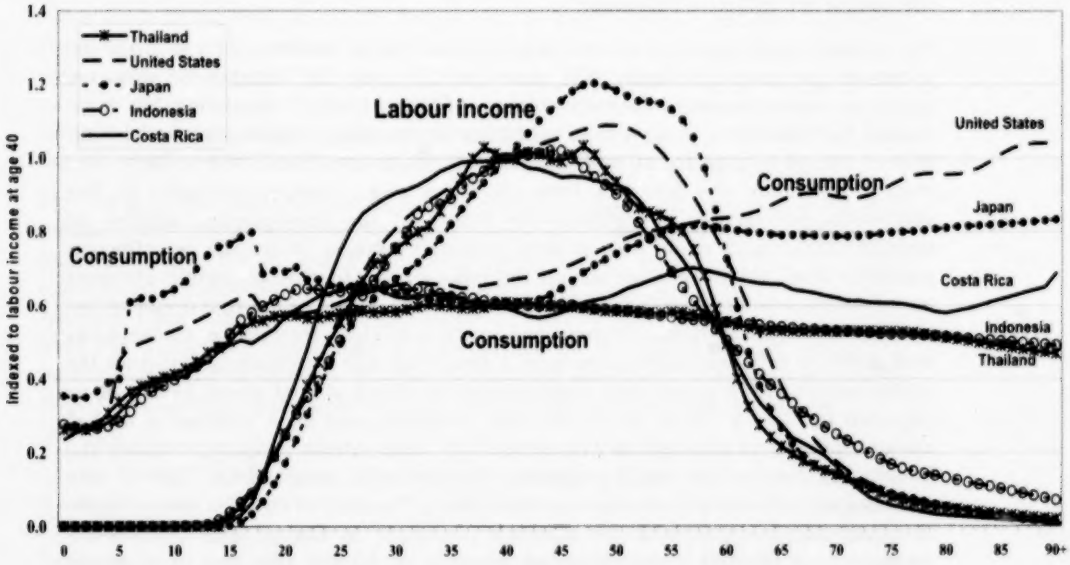
35. Provisions are also made to incorporate the value of consumption of public goods and services, that is, those produced or purchased by the Government and provided to the population free of charge or at a nominal cost. As much as feasible,

[5] Ronald E. Lee and Andrew Mason, "Population ageing, wealth and economic growth: demographic dividends and public policy".

the consumption of public goods and services is allocated by age according to the age of the intended beneficiaries of particular programmes. Information on budget allocations for particular programmes or services and on utilization levels is used to make the necessary estimates. As in the case of labour productivity, once all the components of consumption have been estimated by age, they are summed, and the total is expressed on a per capita basis age by age. The resulting profile is checked for overall consistency with estimates provided by the national income and product accounts.

36. To make the resulting consumption and labour income schedules comparable among countries, they are standardized with respect to estimated labour income at age 40. Figure VII shows the resulting patterns of consumption and labour income by age for five countries: Costa Rica, Indonesia, Japan, Thailand and the United States of America. A key feature of these schedules is their general similarity across countries. In particular, labour income increases rapidly after age 15, tends to plateau over the working ages and declines fairly steeply after age 60, becoming low in most countries after age 70. The labour income curves for Japan and the United States deviate from this pattern by reaching a maximum later in life (at age 47 in Japan and 50 in the United States) than the equivalent curves for the three developing countries considered.

Figure VII
Consumption and labour income schedules by age for selected countries



37. With respect to consumption, it rises markedly from childhood to early adulthood in all the countries considered, reaching a peak in the early adult years. Consumption levels then tend to flatten until about age 40. After that, two distinct patterns emerge: in Japan and the United States of America, the levels of consumption increase with age after age 40. In Japan the increase stops at about age

60 and the level of consumption flattens markedly thereafter, but in the United States the increasing levels of consumption continue until old age. This remarkable increase is caused by the high levels of health spending at older ages in the United States. In sharp contrast with the consumption profiles of these two developed countries, levels of consumption in the three developing countries considered remain fairly stable after age 40 and tend to decline after age 60, though in Costa Rica consumption at very old ages rises somewhat.

38. Given the age-specific pattern of consumption, one can calculate the number of "effective consumers" in a population by multiplying the average consumption at each age by the number of persons of that age and adding the products over all ages. The number of "effective producers" can be calculated in a similar way but using average labour income by age instead of consumption by age. Then, the "economic support ratio" is calculated as the number of effective producers or, more precisely, the generators of income, divided by the number of effective consumers. Consequently, increases in the economic support ratio imply that the number of effective producers per effective consumer is increasing and, all other things being equal, such an increase means that income per effective consumer must also be rising since there is more production per consumer. For this reason, Lee and Mason define the demographic window of opportunity as the period over which the economic support ratio increases, and they associate the first demographic dividend with the rate of growth of the economic support ratio, pointing out that, provided that income per effective producer remains constant or increases, every percentage point increase in the economic support ratio translates into an equivalent increase in the income per effective consumer.[5]

39. Using model patterns of consumption and labour income derived from the schedules presented in figure VII, one can calculate the number of effective producers and consumers in each country of the world. A simulation has been carried out whereby a fixed pair of schedules representing consumption and labour income by age is used for all countries in each major area from 1950 to 2050. The pairs of schedules vary, however, from one major area to another (see table 3). The simulation permits one to estimate the length of the demographic window of opportunity for each major area and the potential increase in income per effective consumer that would be achieved on the basis of the first demographic dividend alone. As the results presented in table 3 indicate, the period of the first dividend has already closed for Northern America and is about to close for Europe. Oceania can look forward to a few more years with a beneficial age distribution. For Asia the period associated with the first demographic dividend started about 1975 and is expected to close in 2030, while for Latin American and the Caribbean it started about 1980 and is expected to last until 2035. Only Africa is likely to enjoy the beneficial effects of the first demographic dividend until at least 2050. Table 3 also provides an indicator of the extent to which the full period of the first demographic dividend may boost income per effective consumer. In Europe and Oceania the increase over the full dividend period amounts to 12 per cent and in Northern America to 16 per cent. These numbers are lower than the equivalent for the major areas in the developing world because the reduction in fertility in Europe and Northern America after 1950 was moderate, since fertility levels in those areas were already fairly low in the 1950s.

Table 3
Indicators of the length of the first demographic dividend and its overall impact by major area

	Period of first dividend		*Estimated increase in income per effective consumer (percentage)*	
Major area	*Start*	*End*	*Over whole period*	*With respect to 2005 levels*
Africa	1990	2050	32	28
Asia	1980	2030	29	8
Latin America and the Caribbean	1975	2035	38	12
Northern America	1975	2005	16	0
Europe	1975	2010	12	2
Oceania	1975	2015	12	1

Note: The labour income model used for Northern America and Europe is skewed to older ages; the consumption schedule for Northern America and Europe is high for all age segments; that for Africa, Asia and Latin America and the Caribbean has medium consumption before age 20 and low consumption afterwards; and that for Oceania has high consumption up to age 60 and low thereafter.

40. For Africa, Asia and Latin America and the Caribbean, the expected increases in income per effective consumer associated with the full period of the first dividend range from 29 per cent in Asia to 38 per cent in Latin America and the Caribbean. However, most of the effects of the first dividend have already accrued to those two major areas. During the window of opportunity still remaining, they can expect more modest increases (8 per cent in Asia and 12 per cent in Latin America and the Caribbean). Again, Africa is the only major area that can look forward to realizing the full benefit of the first demographic dividend by 2050, amounting to 28 per cent.

41. In sum, the simulated trends in the economic support ratio are consistent with trends in the overall dependency ratio. Europe and Northern America are already well advanced in the process of population ageing and are no longer likely to benefit much from a beneficial age structure. Oceania will soon be in the same position. Asia and Latin America and the Caribbean still have a couple of decades to benefit from the window of opportunity and to prepare for an acceleration of the ageing process. Only Africa can look forward to a long period in which the age structure of its population may prove beneficial, provided its fertility continues to decline.

42. Whether the favourable effects of changing population age structures are limited to the demographic window of opportunity depends on how the first dividend is used. One possibility is that the additional income it generates is entirely consumed, including by opting for earlier retirement or a later entry into the labour force. In that case, the effects of a favourable age structure will be entirely transitory. But there is a second possibility: to invest some or all the first dividend in improving human or physical capital or in building stronger institutions that will lead to higher economic growth over the long term. Such a strategy would produce additional growth in income per effective consumer. Thus, depending on the choices made by individuals and the policies pursued by Governments, the first dividend may give rise to a second dividend that persists well after the demographic window of opportunity has closed.

C. The second demographic dividend

43. The first demographic dividend arises and dissipates as changes in age structure over the demographic transition modify the rates of growth of producers and consumers. But population ageing may bring yet other types of changes in the economy that may have more staying power. Economists note that, on average, old people hold more wealth than younger adults because they have had more time to accumulate wealth over their working lives. An increase in the proportion of older persons therefore causes an increase in wealth per capita in the population. In addition to this purely mechanical effect, one can argue that as people anticipate living longer, they are more likely to save more and accumulate more wealth over their lifetimes, reinforcing the effect described above. Moreover, as people have fewer children, they are likely to allocate a larger share of their lifetime earnings to their own consumption, including that in old age, again leading to greater wealth accumulation over their working lives. For all these reasons, wealth per capita is expected to increase as the demographic transition proceeds; thus, increasing wealth per capita, together with the increase in income and consumption that it generates, may give rise to a second and long-lasting demographic dividend.

44. The term "wealth" is used here to refer to all net claims an individual has on future output. Such claims can be based on ownership of an asset, such as a physical property, stock certificates, bonds or other promissory notes, all of which yield returns and can be sold when there is a need to raise capital. But individual wealth also includes the expectation that one will receive a net transfer in the future, either from one's adult children or from a public programme. A net transfer is the difference between the transfers one expects to make, such as payroll taxes, and the transfers one expects to receive, such as benefits from a public pension programme. The present value of expected future net transfers, weighted by survival probabilities, is transfer wealth. Whereas, from the point of view of an individual who must have enough funds to cover his or her consumption in old age, transfer wealth is a substitute for financial or physical wealth, from the perspective of the economy, transfer wealth and assets are completely different. Assets generate income in the aggregate economy through the returns they earn (interest, dividends, profits, flows of services) and, if invested domestically, will also raise wages. Transfer wealth, however, has no such effect and is simply a way of formalizing the redistribution of income from one group to another. Consequently, although for all the reasons stated earlier, the process of population ageing has an enhancing effect on individual wealth, it matters greatly whether the additional wealth held by older persons is held mostly as assets or as transfer wealth. Furthermore, the societal and economic relevance of transfer wealth depends in turn on the extent to which consumption in old age is expected to be defrayed through family support or through unfunded public pension programmes.

45. Two approaches have been taken to modelling and estimating the size of the second dividend, one based on optimizing behaviour by individuals in independent cohorts, the other based on the continuation of sharing patterns across ages, reflecting the interdependence of cohorts. The standard life-cycle model assumes that members of each cohort follow a separate optimal trajectory of consumption over their entire lives, with the height of the profile determined by their lifetime earnings and by their expected longevity. This approach can be generalized to take into account the consumption needs of the cohort's children and the public and

private support systems that may substitute for asset accumulation. With this setup, savings rates rise during the period of the first dividend (so consumption is lower than otherwise) and then fall back to lower levels as the population ages.[6] Furthermore, the ratio of wealth per worker increases substantially and remains high. Unlike the first dividend, which is transitory, the second dividend leads to a permanent change in wealth accumulation. This effect is stronger when provision for retirement through intra-familial transfers or public pensions is weaker.[7] In the absence of such transfers, the ratio of capital to labour doubles or triples. However, these theoretical results should be interpreted with caution because, in practice, the consumption and savings patterns of individuals are not determined by optimizing behaviour. In fact, part of the rationale for instituting public pension systems is a well-founded scepticism about the capacity of individuals to save sufficiently over the life cycle.

46. A second approach assumes that the shape of consumption by age is unchanging over time. This unchanging shape is maintained by sharing income across different ages through the family and through public-sector programmes. Such sharing reflects interdependence among generations, and the effects of altruistic links between generations which contrast with the individual optimization on which the first modelling approach is based. However, just like the first model, this one indicates that both the savings rates and the ratio of capital to labour will rise.[5] While the timing and magnitude of the changes foreseen vary from one model to another, the qualitative conclusions of the two are similar. Furthermore, according to both approaches, the second dividend diminishes when wealth transfers to the elderly are larger.

D. The importance of transfers in ensuring old-age support

47. Since the likelihood that the beneficial effects of the second demographic dividend are realized is higher the less old-age support depends on transfers, it is worth asking to what extent transfers are a significant source of support for the older population in different countries. Transfers can have two sources: private and public. Most private transfers are intra-familial. There are scant data on the dependence of older persons on familial transfers. Estimates of the source of funds for consumption among the elderly in Japan, Thailand and the United States of America indicate that there can be large variations in the extent to which the elderly rely on intra-familial transfers. Thus, whereas in Japan familial transfers account for less than 3 per cent of consumption among the elderly and in the United States for 7 per cent, in Thailand they defray 31 per cent of that consumption.[5]

48. The proportions of elderly persons who report receiving transfers from children also vary considerably among countries. Over 80 per cent of older persons reported receiving such transfers in Thailand and the Philippines; between 60 and 80 per cent did so in Malaysia, the Republic of Korea and Singapore; about 40 per cent

[6] Ronald E. Lee and others, "Life cycle saving and the demographic transition in East Asia", *Population and Development Review*, vol. 26 (2000) (supplement).

[7] Ronald E. Lee and others, "From transfers to individual responsibility: implications for savings and capital accumulation in Taiwan and the United States", *Scandinavian Journal of Economics*, vol. 105, No. 3 (2003), pp. 339-357.

in Hungary; between 20 and 40 per cent in Trinidad and Tobago and in Costa Rica; and under 10 per cent in Argentina and Chile.[8]

49. A study based on surveys on ageing carried out in several cities of Latin America and the Caribbean concluded that older women were more likely to receive financial transfers from their children than older men, that older persons with more children were also more likely to receive transfers and that older persons were especially likely to receive transfers if they lived with at least one of their children.[9] That is, co-residence with children is an indirect indicator of the likely prevalence of familial transfers, especially in developing countries.

50. As table 4 indicates, over 70 per cent of older persons in Asia live with a child and about 60 per cent do so in Latin America and the Caribbean, with women being slightly less likely to live with their children than men. In Africa, 67 per cent of older men but just 55 per cent of older women live with a child. These data suggest that the majority of older persons in developing countries rely on familial transfers for support.

51. In most countries, older people are beneficiaries of public transfers, which include publicly funded health care and public pension programmes that pay cash benefits to retirees. At least 150 countries have unfunded public pension programmes that provide defined-benefit plans to workers. Unfunded pensions are transfers from the working-age population to the elderly beneficiaries. In developed countries, these programmes cover the vast majority of persons in the labour force. Coverage in the developing world is far lower. Many countries have multiple schemes that cover specific groups of workers, most commonly the military and civil servants, and many of these schemes are non-contributory, that is, they are funded from general revenue.

52. Some countries have funded pension programmes, in the sense that the programme holds assets equal in value to the present value of its net obligations. They are also known as defined-contribution plans. At least 19 countries have mandatory funded pension plans for workers in the private sector, which, in several instances, coexist with unfunded public plans. Those 19 countries include three developed countries, nine in Latin America and the Caribbean and seven countries with economies in transition. In those plans, each worker has an individual account in which contributions are saved and invested, and the accumulated capital is usually converted into a pension-income stream at retirement. Such plans are therefore government-organized programmes to save and accumulate capital. They represent one of the possible institutional arrangements to facilitate the realization of the second demographic dividend.

53. There are no comprehensive data allowing the estimation of the number of older persons receiving pension transfers by type of pension system. However, because funded pension plans are rare, we can assume that most current beneficiaries of pension systems receive unfunded transfers. In developed countries virtually all older persons receive pension benefits, but the proportion of beneficiaries among persons aged 60 or over is much lower in the developing world,

[8] Robert Palacios, "Old age security for all: the role of non-contributory pensions", presentation made in Johannesburg, South Africa (27 February 2003).

[9] *Living Arrangements of Older Persons around the World* (United Nations publication, Sales No. E.05.XIII.9).

amounting just to 15 per cent in sub-Saharan Africa, 39 per cent in Asia and Oceania, 46 per cent in Latin America and the Caribbean and about 60 per cent in Northern Africa and Western Asia.

54. When coverage is measured in terms of contributors to pension systems as a percentage of the labour force, Africa's coverage is low (below 10 per cent) and stagnant or even declining in some countries, with younger workers increasingly joining the informal sector and having no access to pension plans. In Southern Asia just about 10 per cent of the labour force is covered, and coverage is expanding slowly. It is particularly low in Bangladesh and Pakistan, at less than 4 per cent. In Eastern Asia coverage varies dramatically, from about 8 per cent in Viet Nam to 73 per cent in Singapore. In China coverage is below 18 per cent. In Latin America and the Caribbean about a third of the labour force is covered, and coverage levels have been rising in some countries. In the countries of Northern Africa and Western Asia for which data are available, coverage is about 40 per cent and stagnant. In countries with economies in transition, coverage used to be universal before 1990 and is now about 75 per cent. Pension coverage at the national level tends to rise with national income per capita, with low levels of coverage being common among low-income countries.

55. Because pension coverage varies so much, it is not surprising to find that public transfers account for 3 per cent of the consumption of the older population in Thailand, while in Japan they account for 65 per cent and in the United States of America for 37 per cent. With low public transfers, Thailand's elderly rely more heavily on their assets (43 per cent), familial transfers (31 per cent) and their own labour income (22 per cent) to fund their consumption. In Japan, labour income accounts for 19 per cent of the elderly's consumption and assets for 13 per cent. In the United States assets defray 41 per cent of the elderly's consumption and labour income 15 per cent.

56. Given that in most of the developing world, public transfers via pension plans cover relatively low proportions of the elderly population, it is likely that many countries have situations similar to that of Thailand, where familial and public transfers need to be supplemented by savings and the use of assets accumulated over a lifetime. In fact, this state of affairs may be conducive to the realization of the second demographic dividend. However, it may also be that countries that so far lack the ability to provide pensions for most of their elderly also have other institutional limitations that prevent asset accumulation. When the elderly cannot rely entirely on either transfers, whether private or public, or assets to defray their consumption, they may continue working. That seems to be the case in most of the developing world. According to recent International Labour Organization estimates, the labour force participation rate among the population aged 60 or over in developing countries is 50 per cent among men and 19 per cent among women, compared with 22 per cent among men and 11 per cent among women in developed countries. Furthermore, in the least developed countries, the labour-force participation rate among older men reaches 71 per cent and among older women 37 per cent.

E. The importance of transfers for intergenerational equity

57. So far, the focus has been on transfers to the older population. However, in all societies, children are also major beneficiaries of both private and public transfers, since they are not able to defray the costs of their consumption through their own labour income. In young populations, both intra-familial and public transfers tend to flow down the age gradient because it is necessary to feed, educate and provide health care to large proportions of children and young persons. As populations age, however, a sort of competition arises at the societal level between the need to provide for children and that of providing for older persons after retirement.

58. Because developed countries are farther advanced on the path of population ageing, it is of interest to consider whether transfers to children have diminished. In 14 developed countries, where total social expenditures increased by 57 per cent per capita between 1980 and 1995, expenditures on both old-age cash programmes and family cash programmes remained steady as a share of total spending, at about 29 per cent and 7 per cent, respectively. Such stability was remarkable because, over the period, the proportion of older persons increased by 11 per cent while that of children fell by 11 per cent.[10] Despite prior expectations that rising numbers of older persons might draw resources away from children, both old-age cash spending per elderly person and family cash spending per child increased in 10 of the 14 countries considered.

Table 4
Percentage distribution of the population aged 60 or over by household composition and sex

Major area	*Alone*	*With spouse*	*With a child or grandchild*	*With a child*[a]	*With a grandchild*[a]	*With other relative*	*With non-relative*
				Male			
Africa	6	11	76	67	9	6	1
Asia	3	15	78	72	3	3	1
Latin America and the Caribbean	8	15	65	63	6	8	4
Europe	15	55	25			4	3
United States	15	60	17			4	4
				Female			
Africa	10	6	71	55	16	11	2
Asia	8	9	76	70	3	6	2
Latin America and the Caribbean	9	11	66	59	10	11	4
Europe	35	30	29			4	3
United States	35	40	19			5	2

Source: *Living Arrangements of Older Persons around the World* (United Nations publication, Sales No. E.05.XIII.9).

[a] The categories "with a child" and "with grandchild" are subsets of the category "with a child or grandchild". The subset figures do not add up to the overall figures because the subsets do not cover all the countries included in the overall category.

[10] Janet C. Gornick, "Social expenditures on children and the elderly in OECD countries, 1980-1995: shifting allocations, changing needs", paper presented at a seminar on the implications of changing age structures held in Taiwan, organized by the International Union for the Scientific Study of Population.

59. The effect of transfers in reducing poverty has been studied in seven Latin American countries for the period 1996 to 1997.[3] The study showed that cash transfers reduced overall poverty levels by 3 to 13 percentage points and were especially effective in reducing poverty among the older population. Their effect in reducing poverty among households with heads aged 25 to 64 was less marked. More recent studies relating to Chile, El Salvador and Mexico indicate that transfers reduced poverty by 18 percentage points in Chile, 9 in Mexico and 3 in El Salvador. In all cases the reduction of poverty was more marked among persons aged 60 or over than among persons under 20. A similar finding applies to Brazil.

60. The evidence available suggests that the elderly, especially those aged 70 or over, are more likely to be poor than persons in any other age group. Survey data for Bulgaria, Nepal, Nicaragua, Peru and Tajikistan indicate that poverty levels for households without any elderly person are lower than for those with at least one older person. Poverty levels for older men living alone range from 20 per cent in Tajikistan to 63 per cent in Bulgaria. The poverty rates among older women living alone range from 18 per cent in Tajikistan to 69 per cent in Peru. Poverty levels for elderly couples living by themselves are more moderate, but not low. In all cases, the elderly would be poorer if pension income were eliminated. In Malaysia older persons constitute only 6 per cent of the population, but they account for 32 per cent of the poor.

61. To combat poverty among the older population, some countries have instituted universal social pensions that provide a minimum income to all older persons without the requirement of having a contributory history. These countries include Bolivia, Botswana, Mauritius, Namibia and Nepal. Brazil has a programme of rural pensions, and South Africa has a programme that uses means testing to determine eligibility. Evidence from Bolivia, Brazil and South Africa indicates that their programmes have been successful in reducing poverty among the elderly, but they have also triggered a reduction in private transfers to them. An unexpected outcome of these programmes is that children living in pensioner households have higher school enrolment and better health. That is, transfers to support the elderly seem to have beneficial effects on the other dependent members of the household.

62. Transfers within the family do not flow only from younger to older members. Since many older persons work, particularly in developing countries, or have assets, they may be important sources of household income or may help their children or grandchildren by funding education or contributing to property purchases. In Latin America, older persons living in urban households with relatives other than a spouse were the source of 17 per cent of the household's income in Venezuela, 19 per cent in Mexico, 39 per cent in Chile and 46 per cent in Bolivia. Such proportions were often higher in rural households of the same kind, ranging from 28 per cent in rural Panama to 68 per cent in rural Argentina.[11]

63. In some circumstances, older persons may have no choice but to be the main caregivers for younger generations. That is the case of grandparents who have to take care of their grandchildren, often because the latter are orphaned. In Africa, for instance, 16 per cent of older women and 9 per cent of older men live alone with their grandchildren, in many cases because the parents of the latter have succumbed

[11] *Shaping the Future of Social Protection: Access, Financing and Solidarity* (Economic Commission for Latin America and the Caribbean, 2006 (LC/G.2294(SES.31/3)/E)).

to AIDS. In Latin America and the Caribbean, as well, there is a relatively high proportion of older women (10 per cent) living with grandchildren. Households headed by older women tend to be among the poorest in all regions.

64. Economists argue that a key measure for reaping the potential benefits of the favourable age structure during the demographic window of opportunity is to invest in educating the young. Today, the world has nearly a billion children of primary-school age (5-12 years), 90 per cent of whom live in developing countries. In addition, the population of teenagers (13-17 years) amounts to another 600 million persons. The Millennium Development Goals call for the achievement of universal primary education by 2015 and for a major expansion of secondary education. The benefits of education in improving labour productivity, the health of the individual and reducing poverty cannot be overstated. Yet, although all countries have committed to improving educational opportunities for their children, the least developed countries are still far from the target set (their primary-school enrolment averages 65 per cent) and are faced with the task of expanding enrolment as the child population continues to increase. It has been estimated that an additional $9 billion (1998 dollars) is needed annually to achieve universal primary education in the least developed countries by 2015.[12]

IV. The transition to adulthood

65. Today the world has about 800 million young adults, aged 18 to 24, 72 per cent of whom live in developing countries. In both developing and developed countries, the levels of educational attainment of younger generations have been improving. As a consequence, children and young adults are remaining at school longer than previous generations did. In part because of those changes and partly because norms about the desirability of early marriage have been changing in many contexts, marriage has been occurring at older ages in many countries. In the least developed countries, where the opportunities for extending schooling are few, women tend to marry earlier than in other countries: in 2005, 27 per cent of women aged 15 to 19 in the least developed countries were already married or in union. The equivalent proportion in the rest of the developing world was 14 per cent, and it was below 4 per cent in developed countries.

66. Early entrance into a stable union leads to earlier childbearing. In 2005, women aged 15 to 19 in the least developed countries had already had 12 per cent of the children they expected to have over their lifetime (close to 5 in total). In comparison, women of the same age in other developing countries had had just under 10 per cent of their expected offspring (2.5 children), and those in developed countries had had 8 per cent of the 1.6 children they expected to bear.

67. A study of trends in marriage concludes that in most of the developing world the proportions of young men and women who are married have been declining. The exceptions are young men and women in South America and young men in both Southern and Eastern Asia. Although the expansion of education among women

[12] E. Delamonica, S. Mehrotra and J. Vandemoortele, "Is EFA affordable? Estimating the global minimum cost of education for all", Innocenti Working Paper No. 87 (Florence, United Nations Children's Fund Innocenti Research Centre, 2001).

explains part of these changes, other factors are at play, including a deficit of older men because of the still increasing cohorts of young people.[13]

68. There have also been important changes in the formation of unions in developed countries. In the countries of Western Europe, the postponement of marriage became marked after 1990, with the mean age of marriage rising above 25 years in almost all of those countries.[14] This postponement has been accompanied by a postponement of first births and by the emergence of low and very low fertility levels in many Western countries. There has also been a diversification of the types of partnerships that young men and women enter into on the path, or even as an alternative, to marriage. In contrast with the Western countries, in the countries with economies in transition, marriage and childbearing continue to occur relatively early, but childbearing also ends early. As a consequence, fertility in most transitional countries is very low. These trends have important implications for future population ageing because, to the extent that the current generations of young persons have fewer children than necessary to ensure their replacement, population ageing will accelerate further and the current generations of young workers will have to accumulate sufficient wealth to defray consumption at older ages because there will not be enough children to support them via transfers.

69. Entering the labour force is another important step in the transition to adulthood. In developing countries, the labour-force participation rate of people aged 15 to 19 has tended to decline since the 1980s, mirroring the increase in school enrolment at those ages.[15] There are, however, large variations among countries in the level of labour-force participation of young people. For instance, for the period 1990 to 1994, it was 39 per cent in Colombia but 72 per cent in Brazil. Similar differences exist among developed countries and reflect not only differences in the availability of part-time and full-time jobs for the young, but also social norms about the appropriateness of teenage student employment.

70. One source of concern regarding youth employment is the high level of unemployment experienced by those entering the labour force. In general, unemployment rates at ages 15 to 24 are higher than for the labour force as a whole and tend to be higher for young women than for young men. Globally, 47 per cent of the unemployed are aged 15 to 24 and youth unemployment stood at 14 per cent in 2003. Unemployment was particularly high among young women (32 per cent) and young men (23 per cent) in Northern Africa and Western Asia. The second highest rates occurred among young men and women in sub-Saharan Africa (23 per cent and 18 per cent, respectively). In Latin America and the Caribbean, about 21 per cent of young women and 14 per cent of young men were unemployed. Youth unemployment was about 19 per cent in the countries with economies in transition and 13 per cent in industrialized countries. South-Eastern and Southern Asia had similar levels: 16 per cent and 14 per cent, respectively. The lowest levels of youth unemployment occurred in Eastern Asia, where young women were less likely to be

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[13] Barbara Mensch, Susheela Singh and John B. Casterline, "Trends in the timing of first marriage among men and women in the developing world" (Population Council, Working Paper No. 202, 2005).

[14] Francesco Billari, "Partnership, childbearing and parenting: trends of the 1990s", *The New Demographic Regime: Population Challenges and Policy Responses* (United Nations publication, Sales No. E.05.II.E.10).

[15] Cynthia Lloyd, ed., *Growing up Global: The Changing Transitions to Adulthood in Developing Countries* (Washington, D.C., National Academies Press, 2005).

unemployed than young men (6 per cent versus 8 per cent). In recognition of the fact that the younger generations are the key to the future, improving their employment opportunities is one of the major development goals.

V. The epidemiological transition: changing causes of death by age

71. The transition from high to low mortality has been accompanied by an "epidemiological transition" in the causes of death. In high-mortality populations, infectious and parasitic diseases are the dominant causes of sickness and death. Mortality rates are high at all ages, but young children are particularly vulnerable. As improved hygiene, nutrition and medical treatments reduce the toll of infectious diseases, non-communicable diseases become the foremost causes of morbidity and death. As child survival increases, deaths are shifted increasingly to older ages.

72. Developed countries underwent the epidemiological transition in the late nineteenth and early twentieth centuries. In the developing world, the transition started later and gained momentum after 1950, with life expectancy increasing from 41 years for the period from 1950 to 1955 to 63 years for the period from 2000 to 2005, mainly as a result of declining mortality from infectious diseases. According to the Global Burden of Disease project, between 1990 and 2001 the share of deaths caused by communicable, perinatal, maternal and nutritional causes declined from 33 to 20 per cent worldwide, if AIDS deaths are excluded.[16] Including AIDS deaths, the overall share of deaths from communicable causes remains largely unchanged between 1990 and 2001.

73. Although life expectancy has increased markedly in developing countries, in the least developed countries it is still a low 51 years, mainly because many of them are still in the early stages of the epidemiological transition. Thus, 42 per cent of deaths in the least developed countries are of children under the age of 5, while only 16 per cent are of persons aged 65 or over. The toll of infectious diseases that have been controlled in other parts of the world, such as malaria and measles, remains high. In addition, many of the least developed countries have high levels of HIV prevalence.

74. Not only did mortality decline in most developing countries since 1950, but it also dropped in most developed countries as deaths from non-communicable diseases, particularly cardiovascular disease, were pushed to increasingly advanced ages. In France, for instance, from 1971 to 2002, life expectancy at age 65 rose from 16 years to 21 years among men and from 21 to 26 years among women.[17] In the period 2000-2005 more than 80 per cent of deaths in France occurred at ages 65 or higher, and 50 per cent at age 80 or over. However, not all developed countries have experienced a sustained reduction in adult mortality. In Eastern Europe, although infectious diseases were largely controlled by the 1960s, cardiovascular disease remains a major killer. In the early 1990s, several countries of the Commonwealth of Independent States experienced a marked increase in mortality from cardiovascular disease and external causes, particularly among men.

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[16] C. D. Mathers, A. D. Lopez and C. J. L. Murray, "The burden of disease and mortality by condition: data, methods and results for 2001", *Global Burden of Disease and Risk Factors* (New York, Oxford University Press, 2006), pp. 46-240.

[17] *World Population Policies 2005* (United Nations publication, Sales No. E.06.XIII.5).

75. The leading causes of death vary by age (see table 5). The vast majority of deaths of children take place in less developed regions and are caused by the infectious diseases prevalent in those regions. Among adults aged 15 to 59, HIV/AIDS is the major cause of death, together with tuberculosis, whose prevalence has risen in parallel with that of HIV infection. Heart disease also begins to take a heavy toll at ages 15 to 59, as do external causes, including traffic accidents, self-inflicted injuries and violence. Among those aged 60 or over, heart disease, cerebrovascular disease and chronic obstructive pulmonary disease together account for nearly half of all deaths worldwide.

Healthy life expectancy, compression of morbidity and health-care costs

76. The burden of disease goes beyond mortality. Episodes of communicable disease can have disabling consequences. Furthermore, the non-communicable diseases that have become the leading causes of death in most populations usually entail periods of ill health and disability, non-fatal chronic conditions, such as depressive disorders, cataracts, hearing loss or arthritis, affect quality of life and raise health-care costs. To improve the well-being of populations, health policies must address both premature death and the ill health associated with chronic disease and the sequelae of communicable diseases. Developing countries are already facing the double burden of ill health due to infectious diseases and a rising prevalence of chronic disease. Their health systems may be ill prepared to face these new burdens and will need to adapt to a new reality.

77. Health-adjusted life expectancy (HALE) is a measure of the proportion of life lived without ill health or disability. Estimates made in 2002 indicated that, at the global level, HALE was nearly 58 years, that is, about 7.5 years lower than life expectancy. Among major areas, HALE ranged from a low of 40 years for the male population of Africa to a high of 70 years for the female population of Western countries. This meant that in Africa people expected to experience ill health over about 15 per cent of their lives, while in Western countries ill health would affect about 9 per cent of the life span.

78. Studies of healthy life expectancy arrive at some interesting conclusions. Most studies find that women have both more years of healthy life expectancy than men and more years of life in poor health. The estimated years of ill health are similar in developed countries and developing countries, but the average onset of disability occurs earlier in developing countries than in developed countries, and therefore a greater proportion of life is spent in ill health in developing countries.

79. In a number of older populations, morbidity has been found to vary inversely with socio-economic status, implying that future trends in disability will likely be influenced not only by medical progress but also by the socio-economic composition of the older population. Higher levels of education, in particular, are associated with lower levels of disability, partly because better-educated individuals adopt healthier lifestyles (avoid smoking, have better diets, engage in more exercise). Early life conditions, including nutritional status and exposure to communicable diseases, also appear to have an impact on health in later life. Hence, future cohorts of older persons may be healthier because of recent improvements in social and environmental conditions.

Table 5
Leading causes of death by age group, 2002

Age group	*0-14*		*15-59*		*60+*	
Rank	*Cause*	*Percentage of all deaths*	*Cause*	*Percentage of all deaths*	*Cause*	*Percentage of all deaths*
1	Perinatal conditions	20.6	HIV/AIDS	14.1	Ischaemic heart disease	20.1
2	Lower respiratory infections	16.8	Ischaemic heart disease	8.3	Cerebrovascular disease	16.2
3	Diarrhoeal diseases	13.2	Tuberculosis	6.4	Chronic obstructive pulmonary disease	8.3
4	Malaria	9.3	Road traffic accidents	5.1	Lower respiratory infections	4.8
5	Measles	6.2	Cerebrovascular disease	4.9	Trachea, bronchus, lung cancers	3.2
6	HIV/AIDS	4	Self-inflicted injuries	4.2	Diabetes mellitus	2.6
7	Congenital anomalies	3.7	Maternal conditions	3.2	Hypertensive heart disease	2.5
8	Whooping cough	2.5	Violence	2.9	Stomach cancer	2.1
9	Tetanus	1.8	Cirrhosis of the liver	2.4	Tuberculosis	1.7
10	Road traffic accidents	1.5	Lower respiratory infections	2.2	Colon and rectum cancers	1.6

Source: Mathers and others (2004).

80. As longevity increases, a crucial issue is whether it involves an increase in years of healthy life or just an expansion of morbidity. The issue has not been settled definitively. Studies of trends in health expectancy are available mainly for developed countries, and their results vary according to the definition of health expectancy used. If only severe disability is considered, disability-free life expectancy tends to rise in parallel with life expectancy. However, if the definition of disability is expanded to include more moderate conditions, disability-free life expectancy increases more slowly than life expectancy, implying an increasing period lived in poor health.[18] A recent study relative to the member States of the European Union found wide variations in the estimated level of disability and conflicting directions in the trends: some countries experienced a compression of morbidity but others experienced an expansion.[19] Problems of comparability could be at the root of those conflicting results.

81. Even if disability rates decline in the future, the number of disabled older persons is projected to grow as the number of older persons increases. All countries will therefore face rising numbers of disabled older persons. This burden will be particularly onerous for developing countries, many of which lack the institutional infrastructure to care for disabled persons. Family structures may be strained as the number of older persons with diseases such as Alzheimer's increases.

82. A related concern is the growing costs of health care and long-term care. In most countries with data on health-care costs by age, costs rise steeply after age 60. If the age profile of health-care costs remains constant, total health-care costs are expected to increase as the population ages. For 10 countries of the European Union, projections that isolate the effects of changing population age structure on health-care costs indicate that government expenditure on health and long-term care could increase from 6.6 per cent of GDP in 2000 to 8.8 per cent in 2050. The impact of ageing on health expenditures is not straightforward, however: much of the increase in health expenditure by age is due not to age per se but to high medical costs in the period immediately preceding death. Thus, the improvements in the health status of older persons that may accompany population ageing could mitigate some of the costs. Moreover, to date a large portion of the increase in government health-care expenditures has been due to factors not related to population ageing, including increasing coverage of public health-care schemes, increased demand for health care because of greater prosperity, increased use of expensive technologies and medical price inflation.[20] A 2006 study by the Organization for Economic Cooperation and Development (OECD) that attempted to take account of these varied factors found that trends in per capita expenditure were the most important driver of increases in health-care costs. According to a "cost-pressure" scenario, where per capita expenditures were assumed to grow 1 per cent faster than income

[18] J.-M. Robine, I. Romieu and E. Cambois, "Health expectancy indicators", *Bulletin of the World Health Organization*, vol. 77, No. 2 (1999), pp. 181-185.

[19] "Are we living longer, healthier lives in the EU?" European Health Expectancy Monitoring Unit, Technical Report 2 (2005); available at www.hs.le.ac.uk/reves/ehemutest/pdf/techrep20507.pdf.

[20] "Budgetary challenges posed by ageing populations: the impact on public spending on pensions, health and long-term care for the elderly and possible indicators of the long-term sustainability of public finances", Economic Policy Committee (EPC/ECFIN/655/01) (2001); available at www.efrp.org/downloads/eu_publications/Budgetary_challenges.pdf.

annually, average health and long-term care spending across OECD countries was projected to rise from about 7 per cent of GDP in 2005 to 13 per cent by 2050.

83. Similar projections are not available for less developed countries. However, simple projections with a fixed structure of health-care costs show that in the short term, population growth will be more important than population ageing as a driver of increases in health-care expenditure in those countries. In the longer term, population ageing will become more relevant.

VI. Policy responses to changing population age structures

84. As more populations advance along the path of population ageing, Governments are expressing increasing concern about its consequences. In 2005, half of the Governments reporting described population ageing as a major concern. Developed countries identified population ageing as the second most critical demographic issue, after the HIV/AIDS epidemic. Three quarters of them considered population ageing a major concern. Among developing countries, 42 per cent had a similar assessment of population ageing, and 64 per cent of countries in Latin America and the Caribbean considered population ageing a major concern.[17] In addition, two thirds of all Governments reporting expressed concern about the size of the working-age population (15-59 years). However, whereas developed countries were worried because their working-age populations were small and growing slowly, if at all, developing countries were concerned about their large and rapidly growing labour forces and the challenge of providing decent employment for all.

85. Because population ageing is the result of fundamental and largely irreversible changes, the focus of governmental policy has been mostly on ways of addressing its many consequences and those of the demographic transition more generally. Countries experiencing a protracted period of low fertility are also focusing on measures to promote its recuperation, particularly by adopting family-friendly policies that support parents in combining work and parental roles. Countries with slowly growing workforces have also shown increasing willingness to rely on international migration, often of a temporary nature, to address short-term labour demands. Thus, since 1996 the number of Governments wishing to reduce international migration has fallen by half. Furthermore, the Governments of many countries with slowly growing populations have taken measures to admit skilled migrants and, as necessary, temporary low-skilled workers. Thirty countries have policies to facilitate the admission of highly skilled workers. Promotion of migrant integration has also been pursued. In 2005, 75 countries had programmes to facilitate the integration of foreigners, up from 52 in 1996. Over three quarters of developed countries have integration policies, compared with a quarter of developing countries.[21]

86. Developing countries are grappling with the challenge of providing decent work for their growing labour forces. In 2005 there were nearly 200 million unemployed persons, an increase of 18 per cent since 1995. The highest unemployment and underemployment levels are found in the poorest countries. There is a general recognition that employment creation in developing countries

[21] See E/CN.9/2006/6.

requires employment-intensive economic growth combined with a coherent set of employment and human development policies. Cross-sectoral strategies are necessary to ensure that employment expands along with production and that the benefits of economic growth are widely shared to achieve poverty reduction.

A. Improving the viability of pension systems

87. The long-term economic impact of population ageing depends on whether old-age consumption is financed mostly via transfer wealth or accumulated wealth. Given that most countries, whether developed or developing, have unfunded pension programmes, the long-term viability of these systems depends, in part, on the effects of changes in age structure. However, because the coverage of most of these programmes is still far from universal, their viability may depend less on population ageing per se than on their modes of operation. An examination of implicit pension debt in 35 low- and middle-income countries finds that in most of them implicit pension debt is high relative to conventionally defined public debt. Even in countries with small and relatively recent programmes, pension obligations are the fastest-growing segment of public liabilities.[22] Partly for this reason, countries at all stages of the demographic transition have been reviewing and modifying their pension programmes.

88. There are two main approaches to modifying pension liabilities: to change the parameters under which the programme operates or to embark on a structural reform of the pension system by introducing a mandatory fully funded component. Few countries have chose the latter option. Since 1990 they include Croatia, Hungary, Latvia and Poland in Europe and Argentina (1994), Bolivia (1997), Colombia (1994), El Salvador (1998), Mexico (1997) and Uruguay (1996) in Latin America. Other countries have started to reform their pension systems, and many of those reforms involve a shift from an unfunded, defined-benefit scheme to a multi-pillar scheme that includes a fully funded component. Experts on pension reform suggest that an optimal system would consist of a mandatory, publicly managed, unfunded pillar and a mandatory, either publicly or privately managed, funded pillar, including supplemental voluntary privately funded schemes. Such a system would provide the institutional framework best suited to promote wealth accumulation by current workers and thus make more likely the realization of the second demographic dividend. To promote equity, it would also be important for solidarity principles to guide the operation of the system under the first pillar.

89. Countries opting to change the parameters of a pension system to reduce its liabilities usually focus on two main issues: (a) increasing the period of contributions and, hence, shortening the period over which beneficiaries receive payment by increasing the statutory retirement age or (b) reducing benefits outright, including by changing the mode of pension indexation. Between 2002 and 2006, 41 countries out of 164 reporting a statutory age of retirement increased that age, including 19 developed countries. Taking account of those changes, in 60 per cent of developed countries men are eligible for full pension benefits at age 65 or over, while women become eligible at age 65 or over in just 40 per cent of them. In

[22] Robert Holzmann, Robert Palacios and Asta Zviniene, "Implicit pension debt: issues, measurement and scope in international perspective", *Social Protection Discussion Papers*, No. 403 (World Bank, 2004).

25 developed countries, the statutory retirement age is higher for men than for women, although women are expected to live longer than men. The statutory retirement age in developing countries is often lower than in developed countries: in developing countries it ranges from 60 to 64 years for men in 52 per cent of countries and from 55 to 59 years for women in 44 per cent of countries. In 41 developing countries, the statutory retirement age is lower for women than for men. Between 2002 and 2006 the retirement age for women was lowered in the Libyan Arab Jamahiriya, Saudi Arabia and the Syrian Arab Republic.

90. Developed countries have instituted other changes in pension parameters. These include tightening eligibility requirements for full benefits, as in Germany and Italy; reducing benefits under regular retirement, as in France, Germany, Italy, Japan and the United Kingdom of Great Britain and Northern Ireland; making early retirement more difficult, as in Germany and Italy; or increasing contribution rates, as in Japan.

91. Concerned by population ageing and the unsustainability of pension schemes, Governments are also promoting greater self-reliance regarding income security for old age, and some have even mandated children's responsibility to provide care and support to their parents in old age. In an increasing number of countries, both developed and developing, the issue of providing adequate health and long-term care for persons unable to live on their own is becoming a pressing policy concern. In some countries, policies promoting ageing in place, through community-based strategies, appear to have halted or reversed earlier trends towards the institutionalization of the elderly.

B. Policies to support families in low-fertility settings

92. It is increasingly recognized that to face the challenges posed by population ageing, a coherent multipronged strategy is necessary. The European Union's approach to population ageing, for instance, is aimed at mobilizing the full potential of people at all ages. It embraces the orientation towards active ageing practices, which include lifelong learning, engaging in health-sustaining activities, working longer and retiring gradually. The strategy to support active ageing relies on mutually reinforcing policies in the economic and social fields. With regard to families and family formation, this approach translates into measures to support parents in fulfilling their parental roles while remaining economically active and to promote equality between men and women in both the employment and family realms.

93. Since 1994, Slovakia and Spain have adopted comprehensive family policies. In Spain, the policy covers tax and housing matters, family law, social and cultural participation and measures to balance work and family life. It was adopted in 2003 as a three-year initiative. Measures to promote gender equality in all spheres of life and to reconcile work and family life have been adopted by Portugal, Spain and Sweden.

94. Since 1994 numerous countries have improved their provisions regarding maternity leave and have adopted new parental leave schemes. In 2000, the International Labour Organization adopted the revised Maternity Protection Convention (Convention No. 183), which stipulates that maternity leave of no less than 14 weeks should be provided. Virtually all developed countries comply with

this provision,[23] and 15 developed countries provide 18 weeks or more of maternity leave. The Convention also stipulates that cash benefits to provide a suitable standard of living should be paid during the maternity leave. In 13 developed countries, the cash benefits paid range from 50 to 79 per cent of earnings. In addition, the number of countries that have in place parental leave programmes has been rising. Eight European countries allow paid parental leave of more than two years for the first child; 12 countries provide paid parental leave for one to two years; four, plus Canada, provide paid leave for less than a year; and nine provide unpaid leave. Because prolonged parental leave often carries heavy opportunity costs for parents in terms of forgone earnings, the degradation of human capital and missed opportunities, the utilization of these programmes is far from universal. In particular, parental and childcare leave programmes have been utilized mainly by women. To promote greater engagement by men, countries such as Belgium, Denmark, Luxembourg, Norway and Sweden have established paternity leave earmarked for fathers.

95. Most developed countries have programmes to provide cash support to families with children. Since 1990 trends in financial support for families have been mixed. Despite competing budgetary demands, especially those associated with population ageing, many countries have maintained or even increased their financial support for families (Germany, Italy, Luxembourg, Spain and Switzerland have increased it). In some cases, budgetary constraints have been met by targeting cash support for the needy through means testing. In the countries with economies in transition, financial support for families was reduced markedly just after the collapse of socialist regimes and has since been restored gradually, but its expansion has been limited by financial constraints.

96. Some low-fertility countries have also introduced other types of incentives to promote childbearing. Since 2002 Italy grants a bonus of €1,000 at the birth of a second child. In 2004, Australia introduced a bonus of A$ 3,000 for each birth. In 2006, the President of the Russian Federation proposed various incentives aimed at reversing the country's population decline. In the Republic of Korea, the Government introduced financial incentives to induce couples to have a second child and measures to increase the compatibility of work and family life for working women.

VII. Conclusions

97. **The world population is in the midst of a historically unique and irreversible process, known as the demographic transition, that will result in older populations everywhere. Between 2007 and 2050, the proportion of persons aged 60 or over is expected to double and their number will more than triple, to reach 2 billion.**

98. **Today, Europe's population is the oldest, with 21 per cent constituted by older persons and 15 per cent by children. Africa's is the youngest, with 5 per cent constituted by older persons and 41 per cent by children.**

[23] Anne H. Gauthier, "Trends in policies for family-friendly societies", *The New Demographic Regime: Population Challenges and Policy Responses* (United Nations publication, Sales No. E.05.II.E.10).

99. **The main cause of population ageing is the decline of fertility, which leads to a reduction in the proportion of children in the population and an increase in the proportion of persons in the working ages. As a result, during a period of 40 to 60 years, the number of producers per effective consumer increases, opening a window of opportunity during which there is the possibility of reaping a demographic dividend by increasing production and thus improving the standard of living of the whole population, provided jobs can be generated for the increasing workforce.**

100. **According to simulations of the economic support ratio, Europe and Northern America are already well advanced in the process of population ageing and are no longer likely to benefit much from a beneficial age structure. Oceania will soon be in the same position. Asia and Latin America and the Caribbean still have a couple of decades to benefit from the window of opportunity and to prepare for an acceleration of the ageing process. Only Africa can look forward to a long period in which the age structure of its population may prove beneficial, provided its fertility decline continues.**

101. **Whereas the first demographic dividend dissipates when the support ratio stops growing, the continuation of the process of population ageing may bring a second dividend as people, expecting to live longer, accumulate wealth to cover consumption needs after retirement. This permanent change in wealth accumulation can lead to greater investment to raise productivity and earnings. According to theoretical models, the effect of the second dividend is greater when wealth transfers to the elderly are lower.**

102. **Most countries have unfunded public pension programmes that transfer funds from the working population to the elderly. In Western countries, the coverage of those programmes is virtually universal. Coverage is lower in the countries with economies in transition and varies greatly in developing countries. Levels of coverage rise with national income per capita, which is to say, coverage in low-income countries tends to be very low.**

103. **Although direct evidence regarding the level of intra-familial transfers to the elderly is scarce, indirect information suggests that they are an important source of support for older persons in many developing countries. However, the high labour-force participation rates among older persons that still prevail in developing countries, and particularly in the least developed countries, suggest that neither public nor private transfers are large enough to provide a sufficient level of support in old age.**

104. **Conditions that would favour the accumulation of wealth to cover consumption at older ages seem to exist everywhere except in Western countries. Governments can facilitate or direct such accumulation by setting up, if they do not already have them, appropriate institutional mechanisms to promote savings and investment, including the addition of a funded component to existing pension systems.**

105. **The evidence suggests that older persons are more likely to be poor than persons in the working ages. Transfer programmes targeting the elderly, such as social pensions, have been effective in reducing poverty among older persons and have even had some positive spillover effects on children and the young. However, it is important that indirect support by older persons for the young**

not become a substitute for programmes targeted to the younger segments of the population.

106. **To accrue the potential benefits of increasing support ratios, it is important to improve the educational attainment of children and youth and to generate sufficient decent jobs for the growing labour force. The high levels of unemployment prevalent among young persons in all major areas indicate that much remains to be done in this regard.**

107. **As mortality continues to decline in most developing countries, the main causes of death are changing. Developing countries need to prepare to face the burden of ill health associated with the persistence of infectious diseases and the increasing prevalence of chronic disease. Even if increasing longevity means a compressed period of ill health, the number of persons requiring care because of disability or severe conditions will increase in both developed and developing countries.**

108. **Concern about the consequences of population ageing is increasing among Governments. Policies have focused on ensuring the long-term sustainability of pension systems and on promoting a holistic approach to population ageing by mobilizing the full potential of people at all ages. Measures to balance work and family life and those that promote gender equality in all spheres of life are part of this approach.**